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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,694	08/03/2006	Yozo Shoji	72314	4956

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EXAMINER	
MAPA, MICHAEL Y	

ART UNIT	PAPER NUMBER
4113	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/597,694	SHOJI ET AL.	
	Examiner	Art Unit	
	Michael Mapa	4113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/03/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/03/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 08/03/06 has been considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (US Patent Publication US 2002/0187769 herein after referenced as Johnson.)

Regarding claims 1 and 6, Johnson discloses a cellular telephone system and method with free space millimeter wave trunk line in which groups of cellular base stations communicate with a central office via a narrow beam millimeter wave trunk line [Paragraph [0012] and Fig. 3]; the millimeter-wave link capable of carrying the signals from several cellular base stations to the central office for switching and routing, and then back out again to the cellular base stations for transmission to the user's cellular phones and communication devices [Paragraph [0027]] which reads on claimed "a plurality of access point stations deploying a wireless service area and forming a communication link with a mobile radio terminal which has entered the service area, and a communication link is formed between the plurality of access point stations to perform

communication,"; Johnson further discloses the cellular base stations transmission from base station to base station and transmission to the user's cellular phones and other communication devices [Paragraph [0027]] which reads on claimed "performing point-to-multipoint type communication with the mobile radio terminal by providing an RF transceiver in each of the plurality of access point stations"; Johnson continues to disclose point-to-point transceivers in the millimeter wave trunk line [Paragraph [0012]] and the millimeter wave link forming a chain from base station to base station back to the central office [Paragraph [0027] and Fig. 3] which reads on claimed "performing point-to-point type communication with other access point stations by providing one or more another RF transceivers in each of the plurality of access point stations."

Regarding claims 2 and 8, Johnson discloses everything claimed as applied above (see claim 1 and claim 6). In addition Johnson also discloses the signals being carried from several cellular base stations to the central office for routing and switching and then back out again [Paragraph [0027] and Fig. 3] as well as continuing to disclose the central office down-converting the millimeter wave signals to cell phone band signals and using standard cellular equipment for detecting, switching and routing the calls [Paragraph [0031]] which reads on claimed "one of the plurality of access point stations is a control access point station performing signal modulation/demodulation or access control, and the other access point stations are a repeater access point station;" Johnson continues to disclose each base station receiving the signal and broadcasting it as well as retransmitting to the next base station in the chain [Paragraph [0033]] which reads on claimed "upon receipt of a signal from an access point station other than the

own station, the repeater access point station branches the signal into two signals, broadcasting and delivering one branched signal to all mobile radio terminals belonging to the coverage area of the own station and at the same time, relaying/transmitting the other branched signal to another repeater access point station." Johnson also discloses the millimeter-wave transceiver filtering the signal and mixing the signal using a heterodyne mixer-down converter to an IF frequency and is sent to the optical fiber transmission media [Paragraph [0042]] which reads on claimed "relaying/transmitting based on a non-reproduction scheme;" Johnson also discloses the millimeter-wave link carrying the signal from several base stations on a chain to the central office for switching and routing [Paragraph [0027] and Fig. 3] which reads on claimed "upon receipt of a radio signal transmitted from a mobile radio terminal belonging to the coverage area of the own station, the repeater access point station relays/transmits this signal to another access point station based on a non-reproduction scheme."

Regarding claims 3 and 9, Johnson discloses everything claimed as applied above (see claim 2 and claim 8). In addition, Johnson discloses the central office as performing call switching and routing and sending the signals back to the cellular base station for transmission to the user's cellular phones [Paragraph [0027]] as well as disclosing the trunk line frequencies for each base station [table in Paragraph [0032]] which reads on claimed "a radio signal transmitted from the control access point station to another access point station, there is attached destination information for allowing a destination access point station to perform identification". Johnson also discloses retransmitting the signal to the next base station in the chain [Paragraph [0033]] which

reads on claimed “each repeater access point station identifies destination information of a received signal, relaying/transmitting the signal to another access point station based on a non-reproduction scheme when the signal is not destined for the own station,”. Johnson continues to disclose the base station down-converting the signal received and broadcasting it [Paragraph [0033]] which reads on claimed “broadcasting the signal to the coverage area of the own station to deliver the signal to all mobile radio terminals when the signal is destined for the own station."

Regarding claims 4 and 10, Johnson discloses everything claimed as applied above (see claim 1 and claim 6). In addition Johnson continues to disclose the millimeter-wave transceiver filtering the signal and mixing the signal using a heterodyne mixer-down converter to an IF frequency [Paragraph [0042]] which reads on claimed “signal processing at the access point station is performed in IF frequency band obtained by performing down-converting from RF frequency band.”

Regarding claim 7, Johnson discloses everything claimed as applied above (see claim 6). In addition Johnson discloses the millimeter wave link forming a chain from base station to base station back to the central office [Paragraph [0027] and Fig. 3] which reads on claimed “the plurality of access point stations are constructed in cascade arrangement or two-dimensionally across a wide area,”. Johnson also discloses a typical cellular telephone system wherein a service provider divides its territory up into hexagonal cells [Paragraph [0003] and Fig. 1] which reads on claimed “whereby a wireless service zone is deployed on a planar surface.”

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being obvious over Johnson et al. (US Patent Publication US 2002/0187769 herein after referenced as Johnson.) in view of NPL document "Millimeter-wave Ad-hoc Wireless Access System" herein after referenced as NPL1.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing

that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claims 5 and 11, Johnson discloses everything claimed as applied above (see claim 4 and claim 10). Johnson discloses the millimeter wave transceiver to have a millimeter wave transmitter and a heterodyne mixer [Paragraph [0039] and Fig. 11A]. Johnson fails to explicitly recite the claimed limitation of "a millimeter-wave self-heterodyne scheme." However, the examiner maintains that it was well known in the art for the system and method of Johnson to incorporate a millimeter-wave self-heterodyne transmission technique for RF units as taught by NPL1.

In a similar field of endeavor, NPL1 discloses using a millimeter-wave self-heterodyne transmission technique to the RF transceiver which greatly reduces the cost of developing and constructing an RF transceiver. [Page 2, Column 1, Lines 1-16 and Fig. 3]

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system and method of Johnson to incorporate a millimeter-wave self-heterodyne transmission technique for RF units as taught by NPL1 for the purpose of reducing cost in the development and construction of the RF transceiver.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Mapa whose telephone number is (571)270-

5540. The examiner can normally be reached on MONDAY TO THURSDAY 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jefferey Harold can be reached on (571)272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Mapa/
Examiner, Art Unit 4113
/Jefferey F Harold/
Supervisory Patent Examiner, Art Unit 4113